

AMENDMENTS TO THE CLAIMS

Claims 1-18 (Cancelled).

19. (New) A method of controlling a generator including a stator having a plurality of salient poles, a rotor having a plurality of salient poles, and a winding wound around the stator, a quantity of the salient poles of the rotor being different than a quantity of the salient poles of the stator, said method comprising:

executing an alternating mode by alternately repeating a supply mode for supplying power from a power source to the winding and a reflux mode for setting both ends of the winding to the same potential; and

after said executing of the alternating mode, further executing the reflux mode, and thereafter executing a regenerative mode for recovering in the power source an electromotive force generated in the winding;

wherein the generator is controlled by a switching circuit having a switching element and a diode connected to both ends of the winding, and the switching element is PWM controlled to execute the alternating mode.

20. (New) The method of claim 19, further comprising detecting a voltage of the power source, wherein said executing the alternating mode includes controlling a continuation time of at least one of the supply mode and the reflux mode based on the detected voltage.

21. (New) The method of claim 19, further comprising detecting a voltage of the power source, wherein said executing the alternating mode and said further executing the reflux mode includes controlling a continuation time of at least one of the alternating mode and the reflux mode based on the detected voltage.

22. (New) The method of claim 19, wherein the supply mode is started at a point in time when an inductance of the winding achieves substantially a maximum value.

23. (New) A method of controlling a generator including a stator having a plurality of salient poles, a rotor having a plurality of salient poles, and a winding wound around the stator, a quantity of the salient poles of the rotor being different than a quantity of the salient poles of the stator, said method comprising:

executing a reflux mode in which both ends of the winding are set to the same potential after executing a supply mode for supplying power from a power source to the winding; and

after said executing of the reflux mode, executing a regenerative mode for recovering in the power source an electromotive force generated in the winding;

wherein the generator is controlled by a switching circuit having a switching element and a diode connected to both ends of the winding, and the switching element is PWM controlled to execute the alternating mode.

24. (New) The method of claim 23, further comprising detecting a voltage of the power source, wherein a continuation time of at least one of the supply mode and the reflux mode is controlled based on the detected voltage.

25. (New) The method of claim 24, wherein the supply mode is started at a point in time when an inductance of the winding achieves substantially a maximum value.

26. (New) The method of claim 23, wherein the supply mode is started at a point in time when an inductance of the winding achieves substantially a maximum value.

27. (New) A method of controlling a generator including a stator having a plurality of salient poles, a rotor having a plurality of salient poles, and a winding wound around the stator, a quantity of the salient poles of the rotor being different than a quantity of the salient poles of the stator, said method comprising:

executing a reflux mode in which both ends of the winding are set to the same potential after executing a supply mode for supplying power from a power source to the winding;

after said executing of the reflux mode, executing a regenerative mode for recovering in the power source an electromotive force generated in the winding; and

detecting a voltage of the power source, wherein a continuation time of at least one of the supply mode and the reflux mode is controlled based on the detected voltage.

28. (New) The method of claim 27, wherein the supply mode is started at a point in time when an inductance of the winding achieves substantially a maximum value.